DECEMBER 18, 1985- 7pm 14 members attended our monthly meeting at the Vestal Public Library. John Sims and Dave Schoenvetter opened the meet with a talk on Hi-soft 'C', the up and coming language! It is designed for multi-tasking and for ease of transfer between different computers, the Amiga to the Atari for instance. If interested in learning more about C, see John at the January meet. John is interested in forming a small C interest group, he got a primer on C and if you are interested there is a SAMS book on the language available.

DAVE talked on the 2050 modem, and its sell out price of $25-see ad info below. Dave picked this up on the modem, via compuserve and one of the local BBSs. Apparently, all one needs is a 9 volt power supply and a cablent if desired. Software can be purchased from most TS dealers.

CLONE is finally in the market place. We advertised CLONE in a seperate letter attached to the Nov/Dec issue of SINCUS NEWS which was mailed to businesses and other User Groups. We will begin the sale of CLONE to local and corresponding members by the middle of January 1986. See the CLONE ad inside this issue. We will not sell to anyone the national rights, as local site rites have been purchased. If not a member of SINCUS, get your group to buy site rights, write care of this newsletter for details.

MACHINE Code Tutor-well,...I am not yet into MC. The tutor really doesn't make anything any clearer. I hope with the aide of some of our members who use MC, and this tutor program, we can make a monthly half hour session on MC enjoyable for all or at least a learning expirience. The documentation with the program is sadly lacking.

NOTICE-----February and March meets are the SECOND, that's right the 2nd Wednesday of the month, we go back to the third Wednesday in April.
Set your watches now---Feb 12 and Mar 12----got that??

GARY Ennis, President, has been out with pneumonia, and over the holidays managed to smoke another machine-this time by putting a cartridge in with machine on. A NO-NO! Well one of these meets he will be demoing the disc drive which is apparently not for sale any more.

Hope all had a safe and happy holiday season. Another year to look forward to, another year to see what happens! keep on POKEing and PEEKing for a BRIGHT NEW year!

JANUARY 15, 1986- 7pm, Vestal Public Library, 10 hardy souls braved the sub-zero weather. Clyde Tackley demoed MASTERFILE from Ramex Intr. Cost about $15. An impressive file program if there ever was one. Clyde is a connoisseur of data bases and if one is on the market chances are he has it! MASTERFILE has all the bells and whistles, boxes and color, and total and average. 51 column printouts, 2040 printer or full sized. Make up your own styles, boxes, layout. A versatile filing, mini- word processor and adding machine in one program.

I put on MACHINE CODE TUTOR, and ran thru the first nine lessons, but the lack of a prepared demo or lessons kept the program from truly being a learning tool. I hope that in the spring, a couple of lessons can be tackled.

CLONE sales are underway. Triangle User group was the first to purchase local site rights. Their specially modified cover screen was mailed early this month. Local members who purchased CLONE can now get documentation. From all who have so far used the documentation, the feeling is, perhaps a final paragraph, on a step by step walkthru is necessary.

Again-check your calendar for the February 12 and March 12 meets-dont show up on the third Wednesday.

Trenton Computer Fair-any takers for the trip down? A possible get together with other UGs on the East Coast-if ANY body wants to go LET me know AS SOON AS POSSIBLE-a few plans to make, may be we could sell a few CLONEs while there!!-April 26,27

A suggestion to donate $25 to the library was made, to help pay for the lights, heat, etc. No opposition, motion will be made and acted on at next meet.

No motion has been made or discussion supported to change our meeting time, day or location.

February starts the nomination process for our annual elections and the President shall appoint four members to a Nomination committee. As the nomination time draws near, think of what you would like to see happen, and who you would like to see run the society, then nominate and/or accept a nomination to office. As a society President cannot succeed himself more than once, Gary is not eligible to run this year.

WE GET A NUMBER OF NEWSLETTERS IN SWAPS WITH OTHER USER GROUPS AROUND THE COUNTRY, AND CANADA, AND NOW, MEXICO. HOPEFULLY WE CAN EXPAND OUR SWAPS TO INCLUDE A FEW MORE GROUPS IN MORE COUNTRIES AROUND THE WORLD-I THINK WE'LL BE THE BETTER FOR IT. READ THE LETTER FROM THE MEXICO GROUP, AND IF YOU HAVE THE TIME, THEY ARE LOOKING FOR PEOPLE TO CORRESPOND WITH..

ATSU, OF OHIO, POB 16274, COLUMBUS, OHIO 43216 REPRINTED MY ARTICLE ON SOFTWARE PIRATING-AND THEN GAVE THE CREDIT TO WES. I CHECKED WITH WES, AND ITS OK! IT IS CONFUSING AS TO WHO WRITES WHAT IN THIS PAPER, SO I'LL ATTEMPT TO CLARIFY AUTHORS. ANYWAY, IT IS NICE TO SEE THAT OTHERS THINK ENOUGH OF WHAT ONE SAYS TO REPEAT IT-THANKS TO ATSU.

I learned a new way to open up programs on the TS2068, the ones with the ON ERR GOTOs, etc, well LOAD on a TS2068 with an emulator, and bingo, you get a listing to play with and save! When I mention this to a couple members, yeah, old hat, been doing it for months, thought everyone knew that! Hey, if you're doing something, write or tell me, and I'll pass it on, so I'm not the last person to find out these things!

Reading all the newsletters, that we get on swaps, I see several things happen, about the same to all at about the same time. Now almost every newsletter is coming out every other month, instead of monthly. The use of Artworx on the full size printer, etc, etc. I feel that ALL newsletters in the Sinclair User Groups around the nation ought to get a "1st Class" ribbon for the mountains of time and energy that go into their production. And our brother groups in Canada and Mexico are the TOPS!. I hope the writers and producers of each newsletter KEEP ON PRINTIN'.!!!

Two years now since that &?!## watch company dropped the ball-I wish nothing but the best to all the vendors, suppliers and manufactors of equipment and software for our TS2068/TS1500 and TS1000s. If you have the chance, support your computer vendor!

FROM ED GRAY, PO BOX 2186, INGLEWOOD, CA 90305- 2050 MODEMS -SANS THE CABIENT AND POWER SUPPLY-LIMITED SUPPLY-WRITE OR CALL 213-516-6848---$25.00, CHEAPER IN LARGER QUANTITIES. TESTED AND 10 DAY RETURN PRIVILEGE....LIMITED SUPPLIES-THIS AD WAS RECEIVED IN DECEMBER 1985. CHECK TO SEE IF ANY LEFT!

ENGLISH MICRO CONNECTION, 15 KILBURN CT.NEWPORT RI 02840 ARE SELLING THE SPECTRUM 128 FOR $259.96 PLUS S+H. AND THE QL FOR $299.95 PLUS S+H. CALL 401-849-3805 FOR DETAILS.

RMG Enterprises, 1419 1/2 7th Street, Oregon City, OR 97045 have the 2050 stripped down models for $25, and the QL and much much more, send a SASE for latest catalog. Tell Rod, SINCUS sent you.

UPDATES: The revised Larken DOS-EPROM- has been delivered and those who have used it say-"it works like a charm, all the bugs are gone." This is the ONLY system compatiable with the Spectrum...the new Spectrum 128 has 128K and is compatiable with the 48K Spectrum...it is only being made and sold in Spain ...Sinclair is coming out with the "Enigma", which will have two 3.5" drives built in, all QL programs bundled on a ROM and a RGB monitor and printer, to be sold in the 500-1000# range.

TS2068: ...got the RAMEX/Amdek III system from RAMEX Int. Ltd., 313-781-5800, 17620 26 Mile Rd. Washington, MI 48094, for $299 which includes the DD IF, the cables, utility disc and the Amdek III drives,(2-3" Hitachi model FD305S drives, power supply and fan.) This system uses SPDOS by Abbeydale Designers. I get 184K usable per side after formatting the DDDS diskettes ...only draw backs-1.DOS occupies from 48999 to 53599 in RAM and 2. documentation should be improved to cover all aspects of this system in a more 'user friendly' manner.

QL...Sinclair is producing 5000 QLs a week and cannot keep up with demand. Hardware and software people are getting more and more involved, because now they can sell in quantity.

EDITORIAL COMMENT...with the increase in business software, telecommunications capabilites, word processing capabilites and a general improvement in programming techniques, we have one of the "BEST, MOST COST EFFECTIVE SYSTEMS ON THE MARKET". Remember that, the next time someone says something disparaging about OUR SYSTEM.

NOTES from Ian: If anyone is thinking about buying the Ramex system, but is reticent about buying a Tasman C CPI, I have converted my Tasman B into a combination Tasman B/C by simply putting a 6 switch DIP on the front of the CPI. I can switch between the B and C modes and also turn OFF the CPI when the 2050 is attached(a must)... Anyone know where to get WD1770 controller chips? Need for the John Oliger DDI bare board systems. Cost in Canada $25 US), any one have a line on these, contact me, or Ian, at above modem connections.

From The John Oliger Co., 11601 Whidbey Dr. Cumberland, IN 46229-has the expansion board and disc boards "A" and "B" available and cables for the 2068, bare boards, and assembled and tested available, write for info and prices. As of his 11/85 info release, the software is not finialized and will be available in the future.

The Brick Wall in Your Computer
by
Wes Brzozowski

"WHEN I USE A WORD", HUMPTY
DUMPTY SAID IN RATHER A
SCORNFUL TONE, "IT MEANS
JUST WHAT I CHOOSE IT TO
MEAN-NEITHER MORE NOR LESS."

"The question is", said Alice
,"whether you can make words
mean so many different
things."

"THE QUESTION IS", SAID
HUMPTY DUMPTY," WHICH IS TO
BE MASTER, THAT'S ALL."
        Lewis Carroll's
Through the Looking Glass

In the last two parts of this discussion, we've seen that the computer is master when it comes to interpreting numbers; if it chooses to ignore reality, there's nothing that we can do about it. Our only defense is to be aware of the computer limitations and avoid them however we can. If we don't, the results can be just as mad as the things Alice saw behind the looking glass or down the rabbit hole.

One cause of the "BRICK WALL" is the fact that the computer uses only a limited number of digits to express a number. Any extra digits in a result just get "chopped off". Last time we saw that changing the order of a multiplication and division could determine whether or not the two numbers were interpreted as equal. Since that could determine the outcome of a program, it's a concern. With that in mind, let's define:

BRICK WALL RULE NUMBER 1:
Avoid using = or with
numbers in an IF statement.
[It's OK for strings]

If you only use integers, and then only do adds, subtracts, or multiplies (no divides !) you probably ignore this rule. Ignoring it in any other case could be trouble. Instead of saying IF A=B THEN...you might say IF ABS (A-B) < .0001 THEN... which not only passes if A=B, but also if A and B are within .0001 of one another. You can, of course, modify this for whatever tolerance you need.

Interestingly enough, the problem we did last time only "fouled up" the TS1000, not the TS2068. The TS2068 already has a small tolerance built into it, but it's not hard to find instances where this "fix" causes problems of its own. First, let's look at a case that will confound both machines.

In the first part of the series we found that:
    1 FOR J= 10000000000 to 10000000010 STEP 2
    2 NEXT J
runs in a flash, but if we change the STEP 2 into STEP 1 it runs forever (on both machines). In decimal, the machine can fairly accurately represent numbers that are about 10 digits long. If we go too much larger, the less significant part is just chopped off. The numbers in our FOR/NEXT loop are 11 digits long, and are in the 'danger' zone. The number 2 is just barely large enough to be added to those numbers without being chopped off; the number 1 is not. Thus, adding 1 gives the same result as adding 0, which means that the final count is never reached. This brings us to:

BRICK WALL RULE NUMBER 2:
Be careful when you mix very
large and very small
numbers.

The next problem can demonstrate both the "round off" error

in the TS2068 that we already did for the TS1000, and also a new problem, not seen before. For either machine, ENTER:

```
 10 LET A=1
 20 LET B=A
 30 LET C=4
 40 FOR J=1 TO C
 50 LET A=A/3
 60 NEXT J
 70 FOR J=1 TO C
 80 LET A=A*3
 90 NEXT C
100 PRINT A, B
110 IF A=B THEN PRINT "EQUAL"
120 IF A<>B THEN PRINT "NOT EQUAL"
```

What the program does is divide 1 by 3, four times, and multiply it back by 3, four times. Mathematically, A still equals B in the end. Running it gives us "1 1   EQUAL" as a result. So far so good.

Now let's foul up the TS2068. Change line 30 to LET C=5, and satisfy yourself that this shouldn't change the result. We simply multiply and divide 5 times, instead of 4. The multiplies and divides equal B at the end. If this is run on the TS1000 the result will be "1 1 EQUAL",which is correct. A TS2068 will give "1 1 NOT EQUAL". Notice that it rounded A up to 1 and printed it on the screen, even though it is slightly less than 1 in the machine. Here's an instance where the 2068 gives a round-off error more easily than the TS1000! The reason for the error is the round-off type, like we demonstrated last time on the TS1000, but not the 2068! Now we have evened the score!

The program becomes more interesting though, when we change line 30 to LET C = 100. This time, for either machine, the result is " 0 1 NOT EQUAL". I think we can agree that "0" is not equal to "1", but how did A get to be "0"? In lines 40 through 60 we did 100 occurances of dividing A by 3. This is the equivalent to dividning A by 3 to the 100th power. Although it's not obvious because the program uses fairly small numbers, this is just a bit larger than 5 followed by 47 zeros. This is a very large number and dividing A by it produces a very small number. Since the computer uses only a limited number of digits the best it can do is to select a number that's close to the answer. In this case the quotient is rounded down to zero. Then, in lines 70 through 90, when we try to compensate by multiplying anything times zero still gives us zero. There's that old "BRICK WALL" again! This is really a violation of rule number 2, but it is so subtle that it deserves a new rule:

BRICK WALL RULE NUMBER 3:
If possible, arrange the
order of your program steps
to keep your variable from
changing any more widely
than they have to.

In this case, we could have alternated the multiplies and divides. It would not only have simplified the program, but A would never have gotten less than about 1/3. It may not have given us equal as a result, but if we applied RULE NUMBER 1, we could have fixed that, as well. If we try to apply all of the rules at once, the program works.

This pretty much concludes my discussion on computer number resolution and limits as they apply to our machines. It is by no means complete; it merely serves as a starting point for those who are interested in accurate programs (and who don't like surprises!). For those who have followed this series to the end and would like to know more, I'll be glad to discuss the subject with you at any SINCUS meeting, or write me care of the newsletter. Send a SASE for a reply, please. In the meantime, I hope my 3 "RULES" might help to make life just a bit easier.

Letter from the User group of Mexico-?
Their excellent newsletter is in our swap
file well worth reading.

Below is a copy of an article run in the local SUNDAY
paper. Reprinted with permission of the Press & Sun
Bulletin. Another story, which says MORE for LESS...

ADRIANA RODRIGUEZ
TLALOC # 21
COL. TLAXPANA
MEXICO D.F.
C.P. 11370

DEAR SINCUS NEWS:

WE RECEIVED BOTH MAY-AUG AND SEPT-OCT OF YOUR
NEWSLETTER. I'M SORRY ABOUT WRITING BACK UNTIL NOW BUT
EARTHQUAKE DID NOT LET US. OUR BELOVED CITY OF MEXICO
THOUSANDS OF INHABITS AND OUR GROUP DIDNT ESCAPE FROM THIS
LOST 5 MEMBERS, ONE OF THEM OUR DEAR LIBRARIAN.

WHAT COULD I SAY ABOUT SINCUS NEWS ? IWOW! IS MY ANSWE
SINCUS NEWS IS THE BEST NEWSLETTER I HAVE SEEN. IT HAS ABOUT
BIG FORMATED PAGES FULL OF REVIEWS, PROGRAMS, GRAPHICS, HARDWA
PROYECTS AND UP TO DATE NEWS. I HAVE ONLY ONE THING TO SAY
ALL WHO HELP IN PUTTING TOGETHER SINCUS NEWS : YOU ARE DOING
GREAT JOB FOR OUR ORPHAN COMPUTERS, WITH THAT CLASS OF SUPP
" WATCH OUT COMODORE, T/S "PUTERS ARE COMING BACK !!!".

ENCLOSED IS THE MOST RESENT ISSUE OF OUR NEWSLETTER WITCH
CALLED "INFO-G.U.T.S.". THE EARTHQUAKE MADE US LOSE 2 MONTH
BUT WE ARE WORKING HARD TO CATCH UP. I HOPE YOU COULD ACCEPT
EXCHANGE OF NEWSLETTERS. YOU WOULD BE HELPING US A LOT !!!

DEAR SINCUS, I HAVENT HEARD FROM ANYONE OF YOUR GROUP,
WANT TO EXCHANGE PROGRAMS, TIPS, INFO, HARDWARE PROYECTS, ETC
WITH YOUR GROUP. PLEASE, COULD YOU TELL THEM AGAIN ?

TELL GARY ENNIS THAT HE'S DONE A GREAT JOB FOR ALL T
TIMEX/SINCLAIR USERS NOT ONLY IN THE U.S.A. AND CANADA, BUT A
FOR THOSE IN MEXICO.

" MERRY T/S CHRISTMAS AND HAVE A HAPPY NEW T/S YEAR "

"LETS KEEP THE T/S FLAME ALIVE.......TOGETHER"

ADRIANA RODRIGUEZ

G.U.T.S. DE MEXICO

P.S. COULD YOU SEND US BACK ISSUES TO COMPLETE WED 5. "COMPUT
INTERUPTUS" SERIE. I HAVE ONLY PART # 4.

4

Computers can do the job for cheap

By LARRY BLASKO
The Associated Press

IN THE TIER

Before you shoulder a third mortgage and start hiring the family dog out for light hauling, remember that it doesn't take the moon and stars to get a workable computer system. Consider the tale of reader Frank A. Durckel of Oak Ridge, Tenn.

In his words:

" ... my complete computer system ... have a few photos ... the least of which is a small thermal printer whose output tends to fade away after a month or two in a file drawer. However, I print a terrible little of what I print so this is no longer a problem ...

"The system consists of a Sinclair ZX81 which originally cost three years ago ... $100 (memory and cost $100) added a 16k add-on RAM ($60), a better keyboard (another $100), and a Timex printer ($100). Of course, these were crazy impetuous purchases because after Timex quit making my machine (they renamed it the Timex 1000), these prices were discounted by at least half.

" ... a tape recorder as the storage medium. This set me back $39. I had to get software too. This consists of a file program, a spreadsheet program and this word processor which doesn't work perfectly, but is fun to play with. My remaining

software consists of a couple of game programs I bought, common in their ... and the acres of blank spreadsheets and ... in their databases? Why is it considered easier to move a cursor around with a mouse than it is to do the same thing with a finger on a key? Why would anyone spend hundreds of dollars on a word processing package and printer unless he happened to be a professional writer, or a student whose best friend can't type? Why are icons better than words displayed in plain old English? What can one do

friend and several dozen special purpose programs written by myself with the aid of the owner's manual in resident BASIC.

do manufacturers keep making more powerful and more expensive computers for the home market? What do people do with those thousands of empty cells in their spreadsheets and the acres of blank

if bored with graphics in 1 color?
Why are all the manufacturers of low-priced, useful home computers gone out of business??

Durckel's stated observations in rate 1381. Some of the ... puters are being heavily discounted as vendors try to clear inventory. Check out Radio Shack's Color Computer, and earlier model of the Commodore and Atari's ... chine.

Before you junk the economy by spending more than $500 to get into computing, keep Durckel's excellent observations in mind.

Budget Robotics & Computing, Box 18616, Tuscon AZ 85731 sent a catalog early in January, and I'll pass on some of the highlights-if you're interested send for the catalog, as I'll just hit on a few of their products. First is their book BUILD A MICROCOMPUTER CONTROLLED ROBOT, by B.C. Taylor, for $13 s+h inc. you get the plans and ideas to build H.E.N.R.Y., as you might guess, a droid, or as some call a robot. They have the rights to manufactor the computer Continuum Buffered Buss Development Board. This will work with the ZX80/ZX81 and the TS1000/1500 computers. A RI81 input/output board is also sold, and these can be plugged into the Buffered Buss Board. The RX81 will work with the TS2068. Several versions of each board are available, and various prices and options listed. A second list of Underdevelopment boards is included, to whet your appetite perhaps. If you still have the old 80s or 1000s gathering dust in the closet, you might want to consider putting it to work, and these boards just might help.

N.Y.T.S.E. NETWORK, 473 WESTMINISTER RD., BROOKLYN, NY 11218- A NEW NEWSLETTER AND VERY, VERY INFORMATIVE, ORGANIZED AND WELL WRITTEN! AND THIS IS ISSUE #2, YET! AFTER READING THEIR LETTER SEVERAL TIMES, THIS IS GOING TO BE WORTH READING. TWO BOOK REVIEWS,POWERFUL PROJECTS FOR YOUR TIMEX SINCLAIR BY JIM STEPHENS-AN INSPIRING BOOK BUT WITH A NUMBER OF MISCONCEPTIONS ABOUT BASIC ELECTRONICS AND PROGRAMMING. PERHAPS SOME ARE PRINT ERRORS, BUT...T/S 2068 BASICS AND BEYOND BY SHARON AKER, OK, BUT...SEVERAL POINTS ON AKER'S BOOK LEAD ONE INTO PROBLEMS IN PROGRAMMING, BUT ALL IN ALL WELL DONE AND USEFUL...AN ARTICLE ON MACHINE CODE, WM. LINDEN GOES AFTER THE VARIABLE POINTER, BETTER KNOWN AS DEST. THIS IS GOING TO BE A VERY INTERESTING NEWSLETTER. SEND A SASE FOR INFO

TRIANGLE USER GROUP, c/o Doug Devey, 206 James Street, Carrboro, N.C. 27510 November and December 1985 issues showed up on about the same day. Dick Scoville is continuing to provide Machine Code tutoring, and it is fairly easy to follow, I am going to run out of excuses for not learning MC yet. A review of a surveryors program, called PRO, for $500, apparently it is a BARGIN compared to what Hewlett Packard or IBM produces! To order this:contact Ken Pankov, Pankov Engineering Co.,1278 Hendersonville Rd., Asheville NC 28803.
The 8K ROM board for the TS1000 is reviewed-called the Hunter Board by many users. Word Sinc II.5 is out- for the TS1000 people-$30(CAN) write to:

INTERGRATED DATA SYSTEMS
30 Brookmount Rd.
Toronto, Ont. Canada
M4L 3M1

5 type styles-wow for the TS1000 yet!!
The December issue, is more Dick Scoville, Paul Hunter's article on ZX81 Bank switching! And a critial review of the Aerco FD-68 disc drive IF and dual drives. Their news by Lonnie Kendall gives a first hand report on the QI, likes and dislikes and overall he's buying a second one, and that pretty much tells it as it is! Sinclair Research is still working on wafer scale ICs-500K memory storage maybe for the QL-but dont hold your breath.

FLASH-from Jack Dohany, 325 O'Connor Street, Menlo Park, CA 94025 (415) 321-7684 CUSTOMIZED MSCRIPT Version 5 is now DONE. By now the documentation should be finished. Jack doesn't put a price on his work, you like it, you pay what you you think it is worth. A trusting soul and lets you set your values on his work, I hope if you contact Jack, send a SASE if you want an answer, and some $, time is valuable. Version 5 should be available soon thru dealers. A high light of Jack's #5 is:

1. Length of text file report corrected.
2. Auto reset to clear computer after terminating MSCRIPT.
3. All operator selected options can be preserved in backups.
4. Kinks in Block print option fixed
5. Extended documentation on disc or tape
6. the 3 menus-Main, Printer, and Disc/Tape are on one Main Menu
7. HEAD switch allows you to stop auto advance to next page
8. NCOPIES-print specific # of copies.
9. SAVE BLOCK
10. DIRECTORY, catalog your textfiles

Two varieties available, one for tape, one for Aerco disc.
This is the latest version, and probably the last, as of January 9, 1986.
In Jack's CMS Newsletter, the printer codes are explained. And I am now happily printing along in italic when ever I feel like it! Again if you write, send a SASE and a couple # to help cover the basic costs, of putting out the info to you. This is a good time to remind all, that if you write any user group or individual in the quest of FREE help or info, use a SASE- that is a Self addressed and stamed envelope. We all appreciate it!

From Modern Electronics, January 1986, page 22, Sinclair's 2" TV, by Fred Blechman:...single IC designed by Sinclair and Ferranti...no need for horizontal hold, vertical hold, brightness and contrast controls because of a 50 times a sec check on picture "hold"...VIDEO Monitor - Computer use!-..I switched to a UHF modulator that generates a signal on Channel 14. I connected the video output of the Timex Sinclair 2068 to the video input of the UHF modulator...result was a nearly perfect picture, readable picture...forty column text was fine...
If interested in more technical details get the article, for a personal opinion of the flat screen TV, turn the page ......

Sinclair Flat Screen Television
by Mark Fendrick

I guess we all know that the Sinclair name now means more than just computers. Originally it stood for electronic kits, digital watches & pocket calculators. Now you can add televisions to that list; specifically the Sinclair Flat Screen T.V.

Long spoken about, the FSTV is now a reality here in the U.S. Mine was brought from Curry Computer and arrived just in time to be a holiday gift for my wife. The cost is $99.95 and includes an earphone, lithium battery and soft case to protect the TV and keep the image window from being scratched.

The FSTV measures 5 1/2"x 3 1/2"x 1 1/4" and weighs just 5 1/2 ounces. On a recently completed trip to Florida the FSTV came along in my inner coat pocket. When not in use the antenna folds flat against the body of the FSTV.

The picture is produced on a recessed 2" screen. This is important since a major drawback of earlier portable TV's was the difficulty the user had to see the picture in bright light due to glare. By recessing the screen Sinclair has effectively placed it into shadow and eliminated the glare. In addition, the Sinclair-designed screen is **three times brighter than a conventional TV. People who have asked to see my FSTV after having expirience other portables, have all had similiar remarks: "I can see the picture!"** To maintain picture quality, the picture is automatically checked fifty times a second for brightness or contrast. Therefore, there are no brightness or contrast controls on the FSTV.

As a matter of fact, there are very few controls on the FSTV. The first switch you need to know about selects one of the three bands on the TV. The first VHF band covers channels 2 thru 6; the second position is for VHF channels 7 thru 13; and the final position is the entire UHF band. Moving to the right, you next encounter the ON/OFF-VOLume dial. The last dial is used to actually tune to the desired channel. You will notice a great deal of "space" between channels. This is due to the fact that the FSTV is designed to tune in TV broadcasts in any country in the world. This means that this TV can work equally well in the United States, with its NTSC standard, or in the United Kingdom with its PAL standard. This is the only TV of any kind on the market today which can accomplish this feat. Fine tuning is accomplished by using the TUNE dial to find the strongist signal position. You will also probably have to adjust the antenna as well for the best picture. The sensitivity of the FSTV tuner depends on the placement of the TV. You may find that if you are blocked from the broadcast source by a wall, building etc., you could possibly have trouble locking onto the signal. In this case you may have to go to another location, possibly higher.

The unit is powered by a flat lithium battery produced by Polaroid. These can be obtained from Sinclair, or any FSTV dealer, for $9.95 per three pack. Each battery lasts for approximately 15 hours. That is quite a bit longer than the batteries in a convential portable TV. There are Polaroid batteries which can be brought over the counter in many locations, but they will produce a reduced play time - in the vicinity of two hours. Your best bet would be to keep a supply of the Sinclair supplied kind.

If you are the type who hates to miss a particular TV show, I can whole-heartedly reccomend the Sinclair Flat Screen TV to you. I know we love ours.

Thanks Mark, for the column. In a couple footnotes; Mark did his copy on built on his QL, used a Miracle Centronics IF from Curry Computer. Look for Mark's columns in ZX Computing (England) and Computer Shopper (US). Next installment on SOUND in the March issue and QL review in April.

News, New, Views and Reviews Con't.

The Hampton Roads T/S User Group Newsletter, Ed Krampitz, Editor, 17 Rex Avenue, Portsmouth, VA. 23702-2925 writes a monthly newsletter and passes on in their January 1986 issue, a review of what happened in 1985, mostly what did NOT happen- the TC2068 from Portugal, SYNTAX, Dave Higgenbottom, Gladstone. Problems with vendors, Games to Learn By is having problems, Jack Deuber, Casselberry FL dropped out of the business, SYNTAX isnt taking subscriptions, and last spring Gladstone announce it was quitting the timex computer business. And the Westridge 2050 modem is no longer in production. The TC2068 is no longer being sold in the US, and likewise the disc drives from Portugal. So what is NEW for 1986? The Engima, with one megabyte built in, and 2 disc drives from Sinclair...the Pandora, about the size of a Tandy 1000, with a flat screen TV built in, 1200/ 300 baud modem, microdrives, 128K, 72K for a RAMdisc, about 300£...for £99, a cigarette pack size portable phone...on the cellular radio network. -much of this from Sep/Oct 85 issue of the Sinc Times, from the 27 Aug 85 issue of the Computer Currents, by Steve Gold, by way of CATS, Capitol Area TS users group Jan 1986 issue.

How straight I have this is up for grabs!-PAH

𝔑𝔢𝔵𝔱 𝔦𝔰𝔰𝔲𝔢, 𝔍 𝔥𝔬𝔭𝔢 𝔱𝔬 𝔟𝔢 𝔞𝔟𝔩𝔢 𝔱𝔬 𝔟𝔯𝔦𝔫𝔤 𝔶𝔬𝔲 𝔱𝔥𝔢 𝔣𝔦𝔯𝔰𝔱 𝔦𝔫𝔰𝔱𝔞𝔩𝔩𝔪𝔢𝔫𝔱 𝔬𝔣 𝔱𝔥𝔢 𝔭𝔯𝔬𝔤𝔯𝔞𝔪 𝔱𝔥𝔞𝔱 𝔪𝔞𝔨𝔢𝔰 𝔱𝔥𝔢𝔰𝔢 𝔒𝔩𝔡 𝔈𝔫𝔤𝔩𝔦𝔰𝔥 𝔩𝔢𝔱�𝔢𝔯𝔰 ! 𝔚𝔯𝔦𝔱𝔱𝔢𝔫 𝔟𝔶 𝔖𝔱𝔞𝔫 𝔏𝔦𝔳𝔦𝔫𝔤𝔰𝔱𝔬𝔫

///
CLONECLONECLONE..............CLONE...........CLONECLONECL

To make that back up tape for that $25 original program, Spectrum or 2068, get CLONE. Can BLOCK COPY most programs up to 47.5K, and 48K programs with two tape recorders and the LAST RESORT method. Can be LOADed into microdrives, maybe discs-we don't have one to try, but may work. We are selling the rights only to other user groups. We are selling CLONE to dues paying members of SINCUS only! for $6 shipping included, gets you the only copier that will copy just about every program-we have yet to find the ONE it wont. You get documentation, tape and back up, yup! a telephone number or two to call for problems!
///

WHAT DO YOU THINK ABOUT MULTIPLE PART ARTICLES ?

by Wes Brzozovski

I know that a core group of readers have been following my series on the TS 2068 interrupts. Believe me, I appreciate the letters and phone calls. Instead of including the next article in that series, this time I'm going to use this space to ask you some (I think) very important questions.

First, I expect to be "wrapping up" the Interrupts series in another two or three installments, and I need to know what to do next. I realize that this series has been fairly technical in nature. I've tried to keep things from getting too complex, and I've only been partially successful. Interrupts are, after all, a pretty esoteric subject.

I've got topics for several somewhat technical subjects, but I'll need a lot of calls or letters from you, before I go ahead with them. On the other hand, if a lot of you tell me to keep things simpler, I'll drop the technical stuff, and go to more general interest articles.

One possible topic for a series would be the use of the advanced display on the TS2068. I've done a fair bit of 64 column work, and several of my correspondents have promised me some info on their work in other display modes. It seems to me that we can put together a fairly nifty series on this. One thing that might be of interest would be my modifications to my orginial "64 column BASIC" that allows it to run under a Spectrum emulator. I've also included the Timex 64 column routines into a shell that can produce a "64 column BASIC" that's much more sophisticated than the one I had published in Syncware News. (On a closer look at the Timex code, I suspect that's what Timex had in mind, in the first place.)

Another series that might be of interest would be a look at various copy protection schemes. Those who use Spectrum software might be particularly interested in the bizarre tricks they use across the Atlantic. The stuff sold in the US, on the other hand, has virtually no protection. In any case, if you're into hacking, and you want to know the basic tricks, we can cover that. I can also explain the protection schemes used in the more advanced methods like " Power Load-48 ", or "Speedlock". The latter method is particularily nasty, in that it has one portion that can be easily changed, so it "mutates" every time it appears in a new program. It also relies on undocumented Z80 machine code instructions.

A third series that might be of interest is a thorough discussion of the TS2068 bank switching system. Having walked through all the ROM code, I've a pretty good idea of how the expansion banks would have worked. Timex left all kinds of nifty options that have never been used. (Also, both ROMs contain enough bugs that it maybe very hard to use them. Is this why the ROMs, and only the ROMs were socketed?) My own preliminary design for a BUS Expansion Unit, without memory contained about 25 chips. Each memory expansion bank would used about 25 more, IN ADDITION to the memory chips, themselves. Unfortunately, the full bank switching system appears to have been set up to work with custom intergrated circuits, not regular TTL, or the primative programmable array chips that are available to us. All of this is a way of explaining why this series would not include a set of debugged schematics for building a Bank Expansion Unit. I really don't think it's

practical to build, let alone debug the thing. Nevertheless, I can tell you how to do it, if you'd like to prove me wrong. A TTL/Programmable Array version of the Bank Expansion Unit would vastly dwarf the TS2068, and would be a sight to behold (provided that someone else built it.)

Well, there are the ideas I've had, what do you think? Are they too far out? Would you really like to see a series on one of them? You can write to me, Wes Brzozovski, 337 Janice Street, Endicott, NY 13760, and tell me. If you'd like to call me, try (607)-785-7007, and try to call before 9:00pm Eastern time. Hope to hear from you!

NEWS,VIEWS,ETC.....

WARNING: A Highly Addictive Word Puzzle
by Wes Brzozowski

I wrote this little program to help out with a puzzle presented in the December 1985 issue of the Mensa Bulletin. The puzzle almost cries out for computerized help, but even a computer will only help a little.

The puzzle probably has many thousands of solutions. Some solutions however, are better than others. No matter how well you do, you'll be continually be drawn back in hope of a better answer. (" Sure, honey, I know it's late. Just a few more minutes and I'll have this thing licked.")

The puzzle works by taking a word, shifting each letter a certain number of positions in the alphabet, and getting another word. For example, if you shift every letter forward one position (A becomes B, B becomes C, C becomes D ... Z becomes A) the word "ants" becomes "bout". If we start with the word "lap", and shift every letter four positions, we get "pet", and if we instead shift every letter 15 positions, we get "ape".

As a side bit of trivia, many readers are familiar with HAL, the mad computer in 2001: A Space Odessey. Not many readers know why the name HAL was chosen by the author. If every letter in that name is shifted one position, you'll get another very well known name.

Oh well, back to reality. The object of this puzzle, then, is to find the longest word that can be shifted into another word. How many shift positions you use doesn't matter.

The following program will help you in working through the puzzle. You simply type in a word and and you'll see it, along with all 25 possible position shifted "words". You need only scan down the list to see if there are other real words in there as well.

The program I've given is a deliberately simple version. This will allow you to understand and modify it to do whatever timesaving tricks you may think of. When you RUN it, it will simply expect you to type in a word (CAPS SHIFTER only!!) and press ENTER. It will display all 26 letter combinations associated with the word you've typed in. These "words" will be displayed until you press any key, except the number keys.

The number keys are special. For example, if you press the "2" key, the second letter in each word will be shifted one position. Whether or not it's obvious, this new list also represents a solution to the puzzle, if you can find two or more recognizable words in it. However, if your "words" contain 5 letters each, don't press a number key higher than 5, or you'll get garbage on the screen. (Remember, I said this program is a simple version.)

If this description seems complicated, just type in the program and try it; all should become clear.

I found that it was initially fun to try random words. But beware, the longer words rarely give a match. The next step was to try short words, or portions of words, and slowly expand them, if any combination shows promise. You'll want to develop your own strategy, and modify the program to compliment it.

If you rewrite the program for another computer that has a spelling checker (which includes a fairly exhaustive list of words in the English language) you may be able to do a reasonably complete treatment of this puzzle. Unfortunately, I suspect that trying every word in the dictionary file, and comparing every "word" that results to the file also, will require a lot of patience.

Whatever you do, have fun, and let me know of the longest solution you find.

```
WORDSHIFT
 10 REM BY WES BRZOZOWSKI 12/85
 20 REM *****NOTE LINE 105*****
THE POKE PUTS THE CURSOR INTO
CAPS MODE FOR YOU.
100 CLS
105 POKE 23658,8
110 INPUT "letters  a$  LET let
gth=LEN a$
120 FOR j=0 TO 12
125 PRINT TAB 16;
130 GO SUB 300
140 NEXT j
150 PRINT AT 0,0;
160 FOR j=13 TO 25
180 GO SUB 300
190 NEXT j
200 PAUSE 0
210 LET a=CODE INKEY$: IF a<49
OR a>57 THEN GO TO 100
220 LET a=a-49: LET b$=SCREEN$
(0,16+a)
230 LET b=CODE b$: LET b=b+1
240 FOR j=0 TO 12: PRINT AT j,1
6+a;: IF b>90 THEN LET b=b-26
250 PRINT CHR$ b: LET b=b+1: NE
XT j
260 FOR j=0 TO 12: PRINT AT j,a
;: IF b>90 THEN LET b=b-26
270 PRINT CHR$ b: LET b=b+1: NE
XT j
290 GO TO 200
300 FOR k=1 TO length
310 LET c=j+CODE a$(k)
320 IF c>90 THEN LET c=c-26
330 PRINT CHR$ c;
340 NEXT k
350 PRINT
360 RETURN
```

News,views....

Thanks to all, Wes, Stan, Ian Robertson and Mark Fendrick in particular for their help in getting this issue to print. We have had to switch printers, and no where can we meet the price we had, so we are cutting down on freebies, swaps only with those who swap with us. And HEY..... I hope you caught Gary on TV Friday, Jan 24, off to New Orleans for the SUPER BOWL-Lucky Gary !!!

Ooopps...last issue's TRAINS listing, the Ls got left out of line 80...JKLKLKNO' and in line 570 last three digits are 0,3,4...next page is Stan Livingston's latest effort-if you copy this, you will need a character generator program to enter the "graphics". Next issue we may include Stan's hi resolution mode program.

```
5 REM racing
10 GOSUB 9000
20 RESTORE 9000
30 LET n=1
40 FOR n=1 TO 96
50 READ e,f,g$,i,j,k$: IF e=99
60 PRINT AT e,f;g$;AT i,j,k$:
70 IF POINT (10,148) THEN PRINT AT 21,3;"
80 IF POINT (236,167) THEN PRINT AT 19,29;"
90 IF POINT (236,22) THEN PRINT AT 21,3;"
100 IF INKEY$="9" THEN PRINT AT 21,3;"
       PAUSE 0
110 IF INKEY$="" THEN PRINT AT 17,15;"
       RESTORE 360: GO TO 50
120 IF INKEY$="1" THEN PRINT AT 15,18;"
       AT 14,13;"  ";AT 15,18
130 IF INKEY$="2" THEN PRINT AT 15,13;"
       AT 14,18;"  ";AT 15,13
140 IF INKEY$="8" THEN PRINT AT 15,18;"
       AT 14,13;"  ";AT 15,18
150 NEXT n
160 DATA ...
170 DATA 21,27,...
...
740 DATA 1,13,...
750 DATA ...
760 DATA ...
...
990 DATA ...
999 DATA 99,999,...,999,999

9000 INK 4
9010 PRINT AT 15,14;"
9020 PRINT AT 13,14;"
9030 PRINT AT 13,14;"
9040 PLOT 156,47: DRAW -58,0
9050 INK 0
9060 PLOT 0,255: DRAW 0,175: DRAW
9070 DRAW 0,-175
9080 LET ds=1*PI/180
9090 FOR p=0 TO 2*PI STEP ds
9100 LET x=11*COS (p)*9.5
9110 LET y=11*SIN (p)**6
9120 LET x=x+127
9130 LET y=y+85
9140 PLOT x,y
9150 NEXT p
9160 PRINT AT 19,20;"  ";AT 18,21
9170 PLOT 155,21: DRAW -58,0
9180 PLOT 175,28: DRAW -96,0
9190 RETURN
```